

REMARKS

Claims 2, 3 and 5 through 15 are now pending in this application. In response to the Office Action dated June 30, 2005, claims 1 and 4 have been cancelled, claims 2, 3 and 5 through 9 have been amended, and new claims 10 through 15 have been added. Care has been taken to avoid the introduction of new matter. A petition for two month extension of the period for response and appropriate fee charge authorization are submitted herewith. Favorable reconsideration of the application as amended is requested.

Claims 1 through 5, 8 and 9 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. patent 6,632,374 (Rosa). Dependent claims 6 and 7 were held to be allowable subject to overcoming objection thereto for dependency from rejected parent claim 1.

Claims 6 and 7 have been rewritten in appropriate independent form to include the recitation of now cancelled parent claim 1. Withdrawal of the objection and allowance of these claims are respectfully solicited.

In the present invention, switching between input/output optical paths of the input/output paths keeps an optical signal led to any of the plurality of input/output ports from traversing other input/output ports. For example, when the output port is changed from 2d to 2b in Fig. 1, the movable mirror 7 moves to a shunt position for reflecting the optical signals led from the input port 2c to a direction away from ports 2a to 2f. In this shunt position, the voltage source 17 applies a predetermined voltage to the electrode 15b so as to tilt the movable mirror 7d in the direction shown in Fig. 6C, thereby choosing the input/output optical fiber 2b as an output port for the optical signal having the wavelength λ_4 . Then the voltage applied to the electrode 16 is set to zero. As a consequence, the cantilever 11 resumes its initial state as shown in Fig. 4

because of its urging force, whereby the movable mirror 7d returns from the shunt position to the normal position. As a result, the optical signal having the wavelength λ_4 reflected by the movable mirror 7d is output from the input/output optical fiber 2b. As a consequence, the optical signal having the wavelength λ_4 reflected by the movable mirror 7d does not traverse the input/output optical fiber 2c when switching the output optical path from the input/output fiber 2d to the input/output fiber 2b.

The movable mirror 7 is supported by only one cantilever 11, as shown in Fig. 4. One end of the cantilever is fixed on the substrate 8. The distal end of the mirror 7 (or annular support 12) opposite to the fixed end is a free end. At a location in the vicinity of the free end, the upper face of the substrate 8 is provided with an electrode 16 for flexing the cantilever 11 toward the substrate. The free end is preferably provided with a comb part 14. The electrode 16 is preferably a comb-shaped electrode. At a location opposing the movable mirror 7, the upper face of the substrate 8 is provided with a pair of electrodes 15a, 15b for tilting the movable mirror 7 about the axis of the cantilever 11, as shown in Fig. 5.

New method claim 13 recites the inventive operation, in part, as follows:

diverting the optical signal path in a direction out of alignment with the ports;
deflecting the optical signal path by an angle corresponding to a position of the second output port while maintaining the optical signal path out of alignment with the ports; and
directing the optical signal path into alignment with the ports to complete the signal path to the second output port;
wherein the optical signal in the signal path is precluded from traversing any of the remaining ports of the plurality of ports.

Rosa has been applied in rejection of now cancelled claim 1. It is submitted, however, that there is no teaching or suggestion in Rosa about how to switch between the output ports nor

how switching would be performed without traversing other aligned ports. The Rosa disclosure thus does not meet the requirements of method claim 13 or its dependent claims 14 and 15.

New independent claim 10, replacing claim 1, recites, *inter alia*, the following:

a cantilever opposing the substrate and having a first end fixed thereto, a second end separated from the substrate, and a portion intermediate the first and second ends supporting the optical member;

wherein the switch is configured to switch the optical path from the second input/output port to a third input/output port of said input/output ports while precluding an optical signal in the optical path from traversing the remaining input/output ports.

Rosa, as pointed out above, does not disclose or suggest switching between two output ports without traversing the remaining input/output ports. In contrast to the present invention, Rosa employs movable mirror 405, which is supported by a plurality of cantilevers 450. There is no electrode on the substrate at a location in the vicinity of the free end of the mirror. There is no electrode on the substrate at a location opposing the movable mirror. Rosa thus does not disclose the capability to preclude traversal by an optical signal of an unwanted path when switching between output ports. It is submitted, therefore, that independent claim 10 and its dependent claims are patentably distinct. New claim 11, dependent from claim 10, adds recitation of electrode details.

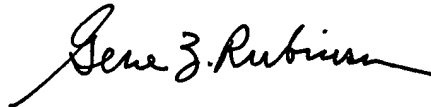
Allowance of the application is respectfully solicited. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in

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fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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A handwritten signature in black ink, reading "Gene Z. Robinson". The signature is fluid and cursive, with a long horizontal stroke at the end.

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